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Attorney's Docket No. 5470.296DV

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Stewart, et al.  
Serial No. 09/991,015  
Filed: November 16, 2001  
For: DETECTION OF BINDING REACTIONS USING LABELS DETECTED  
BY MEDIATED CATALYTIC ELECTROCHEMISTRY

April 21, 2003

Commissioner for Patents  
Washington, DC 20231

**RESPONSE**

Sir:

This is in response to the Official Action of January 21, 2003.

**Remarks**

Claims 113-117 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hadler et al., "Site-Directed Cross-Linking: A New Approach to Mapping Antibody Combining Sites," Proc. Nat. Acad. Sci., **68**(7): 1421-1424 (1971). The reference proposes affinity-labeling the  $\gamma$ A myeloma protein 315 from the mouse with *m*-nitrobenzene diazonium fluoroborate, which leads to selective modification of the tyrosine at position 34 in the light chains of this protein. The azotyrosine bond was reduced with dithionite to form 3-aminotyrosine. For the reasons set forth below, this rejection is respectfully traversed.

It is respectfully submitted that Hadler et al. does not disclose or suggest a labeled member of a binding pair that includes: a) a binder selected from the group consisting of proteins, protein fragments, recombinant proteins, recombinant protein fragments, extracellular matrix proteins, ligands, carbohydrates, steroids, hormones, drugs, drug candidates, immunoglobulins, receptors of eukaryotic, prokaryotic or viral origin, and oligonucleotides; and b) an exogenous peptide label containing one or more modified amino acids capable of being oxidized in an oxidation-reduction reaction at potentials below those of naturally occurring amino acids, as recited in Claim 113. As described in the specification at page 28, "Exogenous labels are moieties that are added to binding members or targets by synthetic, artificial, natural or other

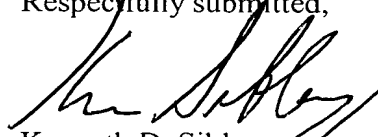
In re: Stewart, et al.  
Serial No. 09/991,015  
Filed: November 16, 2001  
Page 2

means. The role of exogenous labels is to impart electrochemical activity on a molecule that would otherwise be electrochemically inactive or to increase the electrochemical activity of an already active molecule." Thus, Claim 113 recites a protein that is coupled to an exogenous peptide label. In contrast, the Hadler reference appears to, at most, propose the modification of a protein such that the protein itself includes a modified amino acid capable of being oxidized. Thus, Hadler does not disclose or suggest a protein coupled to an exogenous peptide label. Accordingly, it is respectfully submitted that this rejection should be withdrawn.

The Examiner is requested to particularly note **claim 117**, which exemplifies exogeneous peptide labels that may be used to carry out the present invention. It is respectfully submitted that such labels are neither disclosed nor suggested in Hadler et al.

It is respectfully submitted that this application is now in condition for allowance, which action is respectfully requested.

Respectfully submitted,

  
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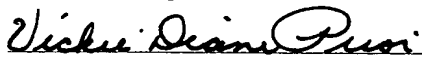
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Vickie Diane Prior

Date of Signature: April 21, 2003

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